

Notice of Allowability	Application No.	Applicant(s)
	10/609,271	ROBBINS, RICKY E.
	Examiner Jeff Natalini	Art Unit 2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. This communication is responsive to application filed 6/27/2003.
2. The allowed claim(s) is/are 1-20.
3. The drawings filed on 6/27/03 are accepted by the Examiner.
4. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some*
 - c) None
 of the:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) hereto or 2) to Paper No./Mail Date _____.
 - (b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. Notice of References Cited (PTO-892)
2. Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 6/27/03
4. Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. Notice of Informal Patent Application (PTO-152)
6. Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. Examiner's Amendment/Comment
8. Examiner's Statement of Reasons for Allowance
9. Other _____.


JAY PATIDAR
PRIMARY EXAMINER

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

In claim 13, line 1: replace "claim 1" to ---claim 11---.

Authorization for this examiner's amendment was given in a telephone interview with Mr. John Pezdek on August 26, 2004.

Reasons For Allowance

2. The following is an examiner's statement of reasons for allowance:

With regard to claims 1, 10, 11, and 20, the prior art does not teach or render obvious the claimed method and devices in combination as claimed including:

- Obtaining a calibration resistor having a resistance which, when placed in parallel to the voltage source, is equivalent to a predetermined maximum leakage current of a single non-shorted printhead in a quiescent state.
- Determining a second circuit voltage across the capacitance load with the calibration resistor electrically isolated from the second circuit and with the first and second printheads in a quiescent state.

Claims 2-9 and 12-19 are allowable because of their dependence on an allowable base claim.

The most pertinent prior art includes:

- Ahne et al. (6758547), a patent assigned to the same assignee, teaches detecting a short circuit in a printhead by applying a first voltage at a first time to a printhead rail while disconnecting the voltage source to permit an induced voltage across the capacitance; and detecting a second voltage at a second time; calculating a time constant based on a circuit with the printhead isolated. The instant invention is a non-obvious improvement over the prior art of Ahne et al. which lacks a calibration resistor. It would not be obvious for one of ordinary skill in the art to add a calibration resistor in parallel to the voltage source that is equivalent to a predetermined maximum leakage current of a single non-shorted printhead in a quiescent state for accurately determining shorts in a system with multiple printheads.
- Davies et al. (6299269) teaches a calibration resistor in a printhead assembly to provide the operating conditions of the printhead to the printhead controller. Davies et al. does not teach or suggest using a calibration resistor to provide a predetermined maximum leakage current of a single non-shorted printhead in a quiescent state.
- Haflinger et al. (6199969) (submitted by the applicant in the IDS) teaches a method for detecting non functional printheads with multiple printheads connected in parallel, containing switches enabling the activation of

certain elements of a printhead. In order to make the determination if an element of the printhead is defective a comparison is made between a measured test current and a reference test current. This invention lacks the use of a calibration resistor and measuring for the test current is done with the printhead activated.

- ElHatem et al. (4853718) teaches a method of comparing discharge time (difference in voltage after a certain time) of the capacitance in order to find a defect in a print head. ElHatem et al. also lacks the claimed calibration resistor.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Natalini whose telephone number is 571-272-2266. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le can be reached on 571-272-2233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeff Natalini



JAY PATIDAR
PRIMARY EXAMINER